

What is claimed is:

1. A composite structure for use in contact with an animal's flesh,  
5 comprising:  
    one or more layers of padding material; and  
    a phase change material (PCM) joined to one of the layers of padding material.
- 10 2. The composite structure of claim 1 wherein the padding material is one or the other of woven or non-woven material, and the PCM is adhered in a plurality of discrete units to individual fibers of the padding material.
- 15 3. The composite structure of claim 1 wherein one of the layers of padding material is an open-celled or closed-cell foam material, and the PCM is coated on individual cells of the foam material.
- 20 4. The composite structure of claim 1 comprising a first layer of felt material, disposed to lie next to the animal's flesh, and a second layer comprising non-woven PCM-coated sheet material applied to the felt on the side away from the animal's flesh.
- 25 5. The composite structure of claim 4 wherein the second layer is applied to the first layer by needle-pointing.
6. The composite structure of claim 1 comprising two layers of felt material with a layer of PCM-enhanced material sandwiched between the layers of felt.

7. The composite structure of claim 1 wherein the PCM material is chosen to be a material for which the phase-change temperature is about ninety-five degrees Fahrenheit.

5

8. The composite structure of claim 1 comprising a first layer of sheep's wool, disposed to lie next to the animals flesh, and a second layer comprising non-woven PCM-coated sheet material applied to the felt on the side away from the animal's flesh.

10

9. The composite structure of claim 1 further comprising one or more layers of anti-bacterial batting material.

15

10. The composite structure of claim 1 further comprising one or more layers of material exhibiting high surface friction to provide a non-skid surface.

20

11. The composite structure of claim 1 further comprising areas of highly wear-resistant material in areas deemed to be subject to relatively more wear than other areas.

12. The composite structure of claim 1 further comprising a shock-absorbing layer.

25

13. The composite structure of claim 12 wherein the shock absorbing material is one an open-celled foam, a visco-elastic material, a gel material, or a closed-cell foam.

14. The composite structure of claim 13 wherein the shock-absorbing material is one of a visco-elastic or open-celled material, in at least 7-pound weight.
- 5 15. The composite structure of claim 12 comprising a pocket between two layers of padding material for enclosing the shock-absorbing material.
16. The composite structure of claim 15 wherein the pocket comprises a closure for retaining the shock-absorbing material in the pocket.
- 10 17. The composite structure of claim 16 wherein the closure comprises one of a zipper, a set of buttons and button-holes, a set of eyelets with laces, or a Velcro<sup>TM</sup> style closure.
- 15 18. The composite structure of claim 1 wherein at least one layer comprises fiber based on rare earth elements, and optically responsive to both wavelengths of ambient light and energy produced by an animal's body, to interactive with the animal in a manner to increase oxygenated blood flow through cell structure of the flesh.